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A
PRACTICAL TREATISE
ON
VESICULAR HYDATIDS
OF THE
UTERUS:

COMPRISING A GENERAL VIEW OF THEIR

ETIOLOGY, PATHOGENY, SEMEIOLOGY, PROGNOSIS,
AND TREATMENT.

BY

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"Homo, naturæ minister et interpres, tantum facit et intelligit quantum naturæ ordine re vel mente observaverit; nec amplius scit, aut potest."

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THIS LITTLE TREATISE

IS DEDICATED,

WITH THE MOST AFFECTIONATE REGARDS OF

THE AUTHOR.

P R E F A C E.

It is beyond the scope of this monograph, and the intention of the writer, to present a complete and formal exposition of the pathology of uterine hydatids; the object he has mainly in view, is, to make a practical digest of the subject, and to communicate the result of his experience in the treatment of the disease.

The pages of the best informed authors have been carefully consulted, and some apology may be considered necessary for the '*nimia diligentia*' of illustration.

Gray has affirmed of notes in general, "that they are signs of weakness or obscurity;" whatever may be the force of this dictum, the expediency of annotating from the records of the past cannot well be disputed; it directs our judgment, elucidates the con-

nection between causes and effects, and furnishes us with lessons of practical utility.

BOYNE TERRACE,

KENSINGTON PARK.

November, 1855.

INTRODUCTION.

THERE are few subjects which have afforded more scope for discussion among pathologists, than the origin and nature of vesicular hydatids, as developed in the uterus of the human female.

It is proposed in this treatise to set before the reader the physical suffering they engender, and to elucidate their pathology, symptoms, and treatment.

Of late years the nature of these cysts has been duly investigated, and the common experience that every subject however isolated its nature, draws with it a voluminous amount of literature, is in this case confirmed.

Many meritorious inquirers have sought impartially to discover some causal relation between the product of generation, and these adventitious growths; while from a want of verbal accuracy, and a logical precision, or from a too partial espousal of the one side or the other on the part of some writers, much sterile disputation has resulted, and the '*post*' and

'*propter*' have been too often confounded; the truths enunciated from a due consideration of this subject will appear in the sequel.

The word *hydatid* — derived from ' *ὑδαρίς*, *vesicula*, *ὑδωρ aqua*,' — has been in pathological nomenclature, applied to vesicular formations, containing a pellucid fluid, developed in the tissues and cavities of the human body.

The earliest information we possess relating to these cystic growths, is derived from the writings of Hippocrates, Aretæus, Celsus, Galen, Ætius and Rhases; but their researches too often resulted in the vaguest conjecture, or unsatisfactory conclusion; so that for all practical purposes, an approximate if not a complete failure must be acknowledged.

Hydatiferous cysts, are divided into two classes.

A. VESICULAR HYDATIDS.—*Entozoa*.

B. PSEUDO-VESICULAR HYDATIDS. — *Simple attached Cysts*.

VESICULAR HYDATIDS are ento-parasitic independent entities, quite detached from the structures in which they occur, and endowed with animalcular life; they are not the product

of a '*generatio æquivoca*' out of morbid organic matter, but are introduced into the organism from without; and wherever they meet with a '*nidus*' congenial to their nature, there they subsist and grow by intrinsic power of imbibition, with the power of reproducing the species by gemmation.

These '*cystica*,' within textures, are almost always distinctly encysted, and enclosed within a capsule effused from the textures; in free spaces, such as the ventricles of the brain, this is not the case. This adventitious outer cyst or capsule, is not to be confounded with the cyst proper to the animalcule itself.

Hartman, A.D. 1685, and Tyson, A.D. 1691, first suggested that they had animalcular life, and Ruysch made the classification of hydatids into true and false.

The true hydatids which occur in the human body are as follows; Acephalo-cystis endogena, Echinococcus hominis, and Cysticercus cellulosa. Zeder placed them in the Entozoa, order Cystica, and Rudolphi has adopted this classification. The Acephalo-cyst has been termed the pill-box hydatid of Hunter, from the gemmules being detached from the internal

surface of the cyst, and it is thus distinguished from those infesting ruminating animals, which are exogenous. Rokitansky considers the *Acephalo-cystis endogena*, the *Echinococcus vesicle* sterile, or devoid of its inhabitant animalcule.*

The *Cysticercus* is confined to the muscular tissue and the eyes, but the other ento-parasites are found generally in the brain, liver, spleen, heart, kidneys, striated muscles, omentum, peritonæum, and areolar tissue.

It has been maintained by some authors, that uterine vesicular hydatids have an independent existence, are organised beings, and that on careful examination, the entozoon—*echinococcus*—may be discovered: however this may be, there is less difficulty in accounting for the entrance of the germs of the *entozoa* into the cavity of the uterus, than to give a satisfactory

* “ Its relation to the *Echinococci* is in all probability, that of affording a suitable nidus for their formation and development, but it is by no means clear why, in some *acephalo-cysts*, the animal cells are wanting, or why, in others inhabited by them, no secondary cysts are produced.” *Pathol. Anat.* by C. H. Jones, M.B.

explanation of the presence of the *Distoma* in the gall-bladder of the human subject.

Linnaeus, Pallas, and Percy, designate them the *Tenia hydatigena*.

M. Percy found acephalo-cysts in the uterus, and Rokitsky observes, "that cysts are very rarely formed in the uterus; we have not met with a single example in Vienna, and I myself have only inspected one case of uterine acephalo cysts."*

PSEUDO-VESICULAR HYDATIDS may be designated simple attached cysts, without animalcular life; partially or entirely in contact with adjacent tissues, and deriving from them nutriment, and means of growth.

Although some few instances of uterine acephalo-cysts are found recorded, such must be regarded as highly exceptional. Of late years pathologists have described uterine vesicular growths, as simple attached cysts.

The membrane of the true hydatid is soft and pulpy, tolerably thick and easily detached; whereas that of the Pseudo-vesicular hydatid, or attached cyst, is thin, tough or leathery,

* Pathologic Anat. Vol. II. p. 291.—Syd. Soc. Edit.

resembling serous membranes, and having blood vessels sometimes upon its parietes.

In the initiation of the formative force of the attached cyst, each cell has the power of producing other cells, as in the ordinary reproduction of animal tissues ; but in the case of the true uterine hydatid, the union of the germ cell and the sperm cell is necessary, indeed, this must be deemed a universal necessity in the generation of organized beings.

The physical condition of the cell-membrane, and the chemical elements which are supplied for nourishment, must exercise some influence on the several processes by which the cysts are produced, developed, and maintained ; and the activity of the specific formative force, must be also modified by the operation of both physical and chemical circumstances.

“ Within the living closed organic cell,” says Dr. Leidy, “parasites very rarely if ever exist, because it is liquid matter only which can endosmose through cell membrane, and therefore solid germs cannot enter, and hence the unfrequency of true *entozoa* in vegetables. *Entozoa* may and do penetrate through living tissues, but it is entirely by the mechanical process of boring.”

These adventitious formations are found partially or entirely in contact with the lining membrane of the uterus, and sometimes imbedded in its structure. The hydatid is occasionally solitary, but the cysts are more frequently clustered with a peduncular attachment; in the early period of their growth they are not equal in size to a mustard seed, but in the more developed form their volume exceeds that of a nutmeg.

“ Elle y présente trois variétés; elle est 1^o avec un pédicule, 2^o Avec un ongles, 3^o Sessile, sans pédicule ni ongles.

“ Les hydatides avec un ongles se trouvent quelque fois dans le vagin ou dans les rugosités qui sillonnent l’orifice externe de l’uterus.

“ Elles y sont en petit nombre, et groupées les une au-dessus des autres. Elles acquièrent moins de volume que les précédentes, (avec un pédicule) leur forme est lenticulaire ou pyriforme, et elles sont très-rares.”*

The cysts are of a spheroidal or ovoid figure, with an investing laminated membrane or envelope, and contain a pellucid inodorous fluid,

* Nauche. Malad. des Femmes. p. 182.

or a product more or less inspissated ; they often terminate in two points, each of them answering to a pedicle, which attaches the vesicle to the rest ; the length of the pedicle is generally about one third of an inch.

The fluid in the cysts of the smallest size is transparent, in the middle opaque, and in the largest verging towards a reddish yellow.

Dr. Churchill states, that he has seen it also of a beautiful pink.

The hydatids have generally a light pinkish hue when put into water.

I have observed that the vesicles when they have arrived at maturity, sometimes contain a gelatinous colloid-like secretion ; this alteration in the density and character of their contents, may be due to absorption by the vessels of the investing membrane which enter by the peduncle, or the variation may depend in some measure on physical causes—endosmose and exosmose,—as the cysts float in a fluid contained in the uterine cavity.

The contents of the hydatie vesicle in a physical and chemical point of view, are not uniform, and there exists no material difference between the constituents of the secretion of the true and

false hydatid. In the uterus the fluid of the attached cysts is either gelatinous or albuminous, and I have found the more consistent colloid-like substance, gelatinous and adipose.

PATHOLOGICAL CHEMISTRY.

PROXIMATE CONSTITUENTS.

THE subjoined analyses of the fluid of uterine attached cysts, and that of true hydatids, have been collated in order to illustrate this branch of the subject.

Nauche states, that the fluid of pseudo-uterine hydatids, "*Il ne se coagule ni par la feu, ni par les acides il n'est nullement albumineux, et il se rapproche par ses caractères des fluides gelatineux ;*"* and Dr. Churchill more recently affirms that "*It is less dense than distilled water, does not turn vegetable blues red, but turns syrup of violets green ; it is coagulable neither by heat nor acids, it is aqueous or gelatinous, but never albuminous.*"†

* *Malad des Femmes.* p. 102.

† *Diseases of Women.* p. 166.

The correctness of the above statements in their entirety, is not confirmed by the investigations of other inquirers ; it is assuredly an error to assert that the fluid contents of uterine attached cysts are never albuminous.

The following passage is from the work of Mercatus :—"Quæ vesiculis repleta, adiposa erat."*

Mr. Kay has examined uterine hydatids "they were enveloped by a fine, firm membrane, separable into two laminae by immersion for a long time in water, of an equal thickness throughout, and of a pale yellow colour. They were attached by one pedicle to the uterus, and weighed fourteen ounces.

"The fluid was of a pale yellow colour, with flocculi of albumen. When boiled, coagulated and turned rather brown, gave a slight alkaline re-action, spec. grav. 1008·6. It contained in 1000 parts 132·38 of solid constituents chiefly albumen, phosphate of lime, cholesterine, inorganic salts, and fat, and 867·62 of water, gave off an unpleasant odour during evaporation,

* De affect. Mulier. Lib. iii.

and left a brown, thick elastic residue upon the glass.

“Under the microscope crystals of phosphate of lime, and cholesterine, were observed.”*

“Uterine hydatids contain a limpid fluid, capable of being partially coagulated by heat and the mineral acids.”†

Vallisneri writes: “*Vesiculæ replebantur liquore coagulabili.*”‡

Collard de Martigny has analysed true hydatids: “The fluid contained in them was faintly yellow, and somewhat turbid, from the presence of flocculi of albumen, which soon settled to the bottom. Boiling produced a marked turbidity, in consequence of the coagulation of albumen. It contained water 96·5, albumen 2·9, and salts, for the most part chloride of sodium, 0·6.”

Göbel obtained from the fluid contained in the hydatids of the liver of a goat, albumen mucus, carbonate of soda, chloride of sodium, sulphate of potash, and phosphate of lime.

* Medical Times, vol. xix. p. 180.

† Diseases of Women, Ashwell, p. 543.

‡ Storia del parto vesiccol, p. 164.

Scherer has analysed the fluid contained in hydatids of the kidney.

In 1000 parts there were contained:

Water	.	.	934.762	
Solid constituents	.	.	65.238	
Albumen	.	.	15.960	} Protein compounds.
Albuminate of Soda.	.	.	10.044	
Alcohol extracts, with				} Transformed matters,
Lactate and Ammo-				
nia Salts	.	.	22.312	
Water extract	.	.	3.797	
Fat	.	.	2.042	
Inorganic Salts	.	.	10.615	} 28.351.
Uric acid	.	.	0.413	

Griffith has examined the contents of acephalocysts: "The transparent fluid of 1.008 spec. grav., coagulated readily by heat or nitric acid, and contained an inconsiderable amount of fat. A thousand parts yielded fifteen parts of solid ingredients, principally chloride of sodium. They left 0.85 per cent. of this salt, a little sulphate of soda, a trace of phosphate of lime, and some albuminous extractive matter, but neither cholesterine, nor alkaline phosphates."

Professor Owen describes the hydatid "as composed of condensed albuminous matter, of a laminated texture, and containing a limpid colourless fluid, with a little albuminous

and a greater proportion of gelatinous substance."

Martigny found the membrane enclosing the fluid was divisible into five laminæ, was insoluble in æther, alcohol, and boiling water, but dissolved even without the aid of heat, in sulphuric, hydrochloric, and nitric acids, from which it was not precipitated on neutralization with a free alkali; it was not dissolved by acetic acid, and was rendered leathery by infusion of galls.

The cyst-wall or the investing membrane of the attached uterine cyst (according to Nauche), "consists of three layers, easily distinguished, an external serous, thin and transparent; the middle fibrous and muscular, and the internal mucous; on the surface of this membrane, both white and red vessels ramify."*

It is necessary to define certain differences which exist in the connection of the attached cyst with the uterine cavity.

A.—The vesicular hydatid in the common form of the affection, *is simply attached by a peduncle to the lining membrane of the uterus, and the peduncular attachment has its seat near the cervix.*

* Malad des Femmes. p. 182.

B.—Sometimes *the cysts are sessile, and are generated so as to cover a large extent of the uterine membrane*; in this case severe hæmorrhage generally supervenes.

C.—Again the cystic growths may penetrate more deeply, *the structure of the uterus becomes involved in hydatid degeneration*, and laceration of the parietes eventually occurs, with fatal hæmorrhagic effusion.

ETIOLOGY.

It has long been recorded that insalubrity of residence, and aliment of a certain nature, have a decided influence upon the development of true hydatids; the same causes may exercise a morbid tendency on the growth of simple attached cysts.

A low degree of organic activity, and slowly digestible food, favour the development of ento-parasites; its long retention in the alimentary canal tends to the reproduction and gemination of entozoic and entophytic germs.

Dr. Jenner proved by direct experiments made upon rabbits, that true hydatids could be

produced by feeding them on green succulent food.

Andral, and Delafond, found the *Distoma hepaticum* in sheep in which dropsy was present; from an analysis made, the albumen in the blood was below the standard.

It may prove of some interest to the reader, to illustrate this branch of the subject, by the following citation from a very ancient authority.

Hippocrates states, that "Water contributes much towards health. Such waters then as are marshy, stagnant, and belong to lakes, are necessarily hot in summer, thick and have a strong smell, since they have no current; but being constantly supplied by rain-water, and the sun heating them, they necessarily want their proper colour, are unwholesome, and form bile . . . those who drink them have a large and obstructed spleen, their abdomen is hard, emaciated, and hot . . . women are subject to œdema and leucophlegmasiæ, and further appear to be with child, and when the time of parturition arrives, the fulness of the abdomen disappears; and this happens from dropsy of the uterus: such waters then I reckon bad for every purpose."

The opinion here given that hydatids originate in drinking the unwholesome water from marshes, is confirmed by a modern authority, as quoted by Coray :

“ Il a été également prouvé par les observations des Modernes, que les fausses grossesses produites par les hydatides ; sont tres-communes dans les pays marécageux, ou la plupart des habitants ont une constitution lâche, propre à l'affection scorbutique, qui y est presque endémique, qu'elles se terminent plus ou moins tard par l'excrétion de ces hydatides.”

Dr. Copeland's observations on this subject are pertinent : “ Attention to the circumstances in which hydatids present themselves in man and in the lower animals proves, that they generally originate in whatever impairs vascular activity and vital power ; and of the causes which produce this effect, none are more influential than unwholesome and insufficient food, living too exclusively on vegetable diet, and residence in humid, cold, and low situations. Indeed in the lower animals they may be produced at will by insufficient nourishment, by humidity, and by food consisting chiefly of green and succulent vegetables.

“Conjoined with these, debility arising from previous disease, convalescence from febrile or epidemic maladies, and the depressing passions exert more or less power.”*

“Causa molarum proxima est quadruplex, vel defectus in genitura particularum, quæ ad cordis requiruntur machinam, vel earum amissus vigor, vel prava situatio, vel externa compressio, quæ singulæ membra divirsas seorsim possunt habere causas remotas.”†

Professor Klencke says, “that many pathologists have ascribed the formation of hydatids to the influence of outward injuries, to the suppression of any discharge to which the system has been long accustomed, &c. It seems not at all improbable that such may be the case with the production of false hydatids; seeing that these causes must obviously tend to promote the disaggregation of certain cellules, the one from the other; but the development of the true kind is in our opinion always owing to the direct introduction from without of ovules or germs of the entozoon, and to their

* Dict. of Pract. Medicine.

† Lamzweerde, p. 119. Hist. Nat. Mol.-uter.

subsequent fixation, so to speak, in those parts of the body where they can find a proper 'nidus' for their growth.*

As to the former or spurious hydatid, it is by no means necessary that it be met with in different parts of the body at the same time; whereas this is very generally the case with respect to the latter species."

P A T H O G E N Y.

Since the time of Ætius (in the fifth century)† the '*mola hydatosa*' has been described by a large number of writers, the greater number of whom agree in considering it a degeneration, or disease of the impregnated ovum, of its membranes, or of the placenta.

As regards the '*Nisus formativus*' and its relation to the product of generation, are we to believe that these cysts are never generated in the virgin uterus, and that celibacy is a

* Medico. Chir. Review, 1844.

† Ætius is said to be the first Christian physician whose medical writings have come down to us.

barrier to their development, in other words, "An virgo absque maris copula possit generare molam."

It is somewhat difficult to reconcile the conflicting testimony which can be deduced relating to this '*quæstio vexata*,' and its bearing on the pathogeny of these abnormal growths.

Thus much has been established on this debatable subject, that the interstitial substance or matrix of the hydatid generally finds a '*nidus*' in the ovum, or some portion of its envelopes, or on the placenta.

In a case that came under my care, there was strong presumptive evidence that it had established itself on the '*debris*' of retained placenta; symptoms of hydatid formation appeared a few weeks after delivery, and under circumstances which precluded the possibility of a subsequent impregnation.

I have subjoined succinct abstracts from the works of authors, whose opinions on this subject carry with them weight and authority.

Dr. William Hunter's lectures on the gravid uterus, delivered A.D. 1765, contain the following account of these productions.

"I have seen a placenta in the fourth month

all degenerating into hydatids. There are two kinds, one where the little hydatids are distinct and detached; the other, where they hang together in strings like bunches of currants. This last sort is the most common in the uterus. They are most common in the placenta, but they may be in other parts of the uterus. Sometimes there are vast heaps of them in the cavity of the uterus, and no remains of the placenta. I ventured, from seeing hydatids coming away from the uterus, to say, that the woman was with child, because they most commonly attended the placenta. I have seen pailsful of hydatids come away from the uterus with pains, the placenta and foetus being thus converted."

" They are generally the accompaniments, as also probably the results, of blighted and other diseased forms of eventually unproductive gestation."*

We read in Dr. Lamzweerde's treatise "*Historia naturalis molarum uteri*," A.D. 1686.

" *Causa efficiens primaria molarum est virtus seminis masculini; secundaria, foeminini; totalis, virtus utriusque sexus seminis unita.*" p. 103.

* Dr. Davis. Obst. Medic. p. 676.

“Virgines non possunt concipere vel generare molam sine copula maris.” p. 171.

“Vidua non potest concipere molam virtute mariti defuncti relicta in utero, sine novo maris auxilio.” p. 176.

“It is the opinion of many, that these substances are never found in the virgin state, and no case that I have yet met with contradicts the supposition. It must be recollected that hydatids may succeed to genuine pregnancy, the foetus may die, and both it and the placenta degenerate into them.”*

Boivin asserts that they are always the consequence of impregnation, and are degenerated ova, and adds “that if the ovum remain attached to the uterus deprived of the foetus, appropriating the blood destined for a foetus, it will probably acquire a considerable volume and capacity; and hence the variety of moles.”

Dr. Baillie in his work on morbid anatomy, states that he never saw an example of hydatids of the uterus, and Dr. Denman, although admitting their occasional occurrence, yet adds that the placental species is what is generally observed.

* Burns' Midwifery. p. 79 and 80.

“True moles” are distinguished from the false, and other growths of the uterus, by their not deriving their origin from the substance of the womb, or its membrane, but by their being always the consequence of conception.”*

Hunter and Hewson, as cited by Dr. Good, believed that hydatids in ‘*utero*’ were frequently the result of a miscarriage.

Puzos speaks of hydatids as degenerated conceptions.

Manning is of opinion that they may be the result of abortion or of degenerated ova.

Montgomery considers “that they invariably result from impregnation.”

Nauche believes that they are generally caused by impregnation, and Capuron and Dugès also concur in attributing their origin to the same cause.

Dr. Kerr says, “that hydatids arise from the destruction of the ovum.” And Dr. Churchill believes, “they are truly consequent upon sexual intercourse and impregnation.”

The authors already cited, concur for the most part in the belief, that hydatids cannot

† Voigtell's Path. Anatomy.

be generated *sine copula maris*; some there are however who maintain a different opinion.

Drs. Blundell and Gardien state, that conception is not a necessary condition.

Dr. Kennedy has affirmed, "that hydatids may occur in virgins."

Sir C. M. Clarke also considers, that they may be produced without previous sexual intercourse.

Evidence more cogent than the previous statements is furnished by the following facts:

Dr. Ashwell* "has seen at least one example where they were the result of diseased action of the uterine lining membrane, independently of sexual intercourse," and remarks, "that Mr. Douglas Fox, Surgeon to the Derbyshire Infirmary, gave me the particulars of a case where a large mass of vesicular hydatids was expelled from the uterus of a maiden lady, where the hymen was unruptured, and of whose chastity there could not be a suspicion.

Dr. Hislop has reported the following case in the 'Edinburgh Monthly Journal of Medicine,' vol. x. page 326:—"A chaste girl seven-

* Diseases of Women, Ashwell, p. 544.

teen years of age, had suffered six months from declining health, loss of appetite, flatulence, thirst, continued sickness, and pain in the loins, emaciation, cessation of the menses, occasional flow of offensive, dirty, or blood-like vaginal discharge; the mammæ were enlarged, and the complexion was of an anæmic dull bilious hue. In consequence of these symptoms, with abdominal increase, she submitted to tactile examination, when perfect integrity of the hymen was found, with a dilated '*os uteri*;' by introducing a catheter into the uterine cavity, and with the aid of ergot, an immense mass of hydatids was expelled. The girl has since married, is in good health, and has had children."

Dr. Koch of Heiligenbeil, has cited a case "where they were probably produced independently of sexual intercourse. A healthy strong woman, thirty-two years of age, had been married nine years, and had borne four children without difficulty. At this time she was living apart from her husband, so that according to the declaration of both there could have been no intercourse. The menstrual function ceased after the weaning of the last child, and the patient observed that her abdomen

became enlarged, as if she were again pregnant. After three months' suffering, during which she was continually upbraided by her husband, in consequence of her condition, pains came on, and hydatids about the size of two fists were extruded, they were collected in a grape-like cluster, and the cysts varied in size from a hemp-seed to that of a walnut."

In Dr. Taylor's volume of Medical Jurisprudence, from which I have quoted the foregoing case, it is stated: "When the mass is expelled it is found to consist of a group of vesicles or cysts of various sizes; but sometimes when this disease follows intercourse, the cysts are found mixed with the remains of a blighted ovum, or a coagulum of blood."

It might appear by the conflicting opinions that have been advanced on this subject, that the question, are they the product of conception? still remains *sub judice*; but enough has been adduced to satisfy the mind of every candid inquirer that this affection is not so enigmatical as some authorities would have us suppose; and that although these abnormal growths are found generally to co-exist with the puerperal state; yet it has been indisputably proved, that

a depraved condition of the lining membrane of the uterus, will, under certain circumstances, have the power of originating the affection *sine copula maris*; it must be admitted, however, that this latter condition is highly exceptional.

Whatever difficulty may be experienced in explaining the *causa proxima*, that difficulty is somewhat lessened, by being cognizant of the fact in reference to their pathogeny, that these morbid formations are for the most part found in conjunction with the 'product of generation; and in directing attention to this point, it may be remarked that the uterus of the married female is liable to various changes, and is endowed with great activity of the vital powers, oftentimes complicated with the presence of divers bases of attachment, in the forms of the ovum, of the placenta, of plastic exudations, or of cacoplastic deposits; under these circumstances there must be a certain proclivity to morbid development, far greater than can exist in the comparatively quiescent state of the uterus of the virgin.

The frequency of the occurrence of the protein and gelatinous exudations, on the inner surface of the uterus, and the morphological

Changes arising out of these products, appear to be connected with the involution of the substance of the uterus, which takes place in the normal condition of utero-gestation. According to Heschl's statement, the proper substance of the organ undergoes such a complete transformation into molecular fat, that of the uterus as it existed before parturition, not a single fibre remains; (?) this may serve to throw some light on the more frequent formation of hydatic cysts in the uterus of the married female.

The diseased growths may arise in the uterus of the virgin, from the operation of some abnormal stimulus acting upon fibrinous exudation, the result of increased plasticity of the menstrual secretion; or morbid action may be excited in the superficial layer of the mucous membrane of the uterus which has become more or less affected by metritic and congestive intumescence or hypertrophy; in like manner abnormal irritation will excite an abnormal action and perverted nutrition in the uterus of the married female; and the placenta, or detached portions of the placenta, the ovum and the membranes, will then become the seats of transformation of texture, and hydatic formation.

In the consideration of this subject it must be borne in mind that there are primary as well as secondary causes of irritation or excitement, general as well as local; depraved conditions of the blood, and an abnormal state of the nervous system, co-existing with a morbid permanance of puerperal uterine hypertrophy, may have the power of producing the disease; and, hereditary influences, a constitutional taint and diathesis, are not to be overlooked.

Thullier has recorded a case of hydatids complicating pregnancy; and in the "Lancet" Journal, published A.D. 1846, Mr. Hunter has given the particulars of a case of uterine hydatids which co-existed with pregnancy, and which were expelled subsequently to the birth of the child; "when the hand was introduced for the purpose of removing the placenta, the uterus was found distended by hydatids measuring about three pints, they were in clusters like bunches of grapes, some as large as hot-house grapes, by far the greater number the size of the common blue cluster grape." They appeared to have been attached to a part of the margin of the placenta, as well as to the uterus; notwithstanding the peculiar complications that

existed in this instance, no unusual symptoms manifested themselves during the whole period of utero-gestation ; it would seem under such circumstances, there is no possibility of detecting the cystic disease, prior to the extrusion of the uterine contents.

Hildanus relates a case of hydatids combined with the pregnant state, the woman was delivered of a *mola aquosa* or vesicle containing ten pounds of water ; she did not miscarry, but went to the full time.

“ Comme la mole charnue, la mole hydatique a quelquefois compliqué une grossesse ordinaire, mais cela est plus rare celle-ci, que pour celle-là.”*

It must be borne in mind that hydatids may be expelled with a blighted ovum from a widow some time after the death of the husband, and that this circumstance should not militate against the reputation of the individual.

“ Signa prognostica sunt, ut docet Hippocrates quod mola perduret interdum usque ad duos aut tres annos.

“ Dixi perdurare ad multos annos, quia

* Boivin et Dugès. Malad-de Uterus. p. 287.

Nicolaus Florentinus refert, se vidisse mulierum quæ viginti annis gestarit molam.*

Chambon refers to this subject in the following terms, " Cette assertion inconsiderée qui est devenue, par sa publicité, une croyance générale, a été la cause des chagrins qu'ont éprouvés des personnes sages, dont la conduite ne devoit point etre soupçonnée."

Dugés makes mention of a woman from whose uterus fifteen pounds weight of hydatids were expelled, which had been accumulating five or six years.

Hydatic cysts remain generally but a few months in the cavity of the uterus; the usual period is from four to six months; in one instance that came under my notice these adventitious formations were retained nine months, and in another nearly two years. The quantity discharged rarely exceeds one or two pounds weight.

The cysts when few in number whether consequent upon impregnation, or the result of diseased action independent of sexual intercourse, are suspended in a fluid contained in

* Hieronymi Mercurialis de morbis mulieb, A.D. 1618, p. 32.

the uterus, which is secreted and retained by an investing membrane similar in nature to the decidua.

Boivin has found them enveloped in a general membranous sac, consisting of two layers, bearing a strong resemblance to the decidua and amnion. It has been asserted by some pathologists that these abnormal growths originate from a morbid condition of the amnion.

Dr. Baillie states,* that the spherical or oval hydatiferous cysts have each a narrow peduncle, by which they adhere on the outside, one to another; the filial cysts adhere to the parent cyst by narrow processes, and are connected with the uterus by small filaments; the peduncles of the hydatids take their origin from a substance resembling blood and coagulating lymph, which is attached to the lining membrane of the uterus. He further remarks, "that the disease may arise in a morbid condition of the ovaria, or in some separation of the *corpora graffiani*."

These cysts are developed on the flocculi of the chorion, or on some portion of the placenta ;

* Morbid Anatomy, p. 136.

upon the flocculi minute swellings appear as they increase in size, they become vesicular, contain a transparent fluid, and may be observed in all stages of their growth, from the scarcely defined vesicle to the well matured hydatid; as their bulk and number increase the ovum becomes gradually enveloped, and finally obliterated.

The filaments which arise from the chorion in the first months of pregnancy, are found, on careful examination to be knotty; hence it is that Ruysch formed an opinion that hydatids are dilatations of the glands.*

Albinus indicates this state of transition "*vasa placentulæ solutæ, libera, per intervalla contractiora, mediis locis capaciora, et tanquam si inceperint in hydatides degenerare.*"† And again, Valisnieri states, that he has ascertained by the microscope, that the lymphatic vessels of the placenta, umbilical cord, as well as those of the chorion and amnion, have attached to them an infinity of minute globules, and terminate at their ultimate ramifications in the

* Adv: Anat. Dis. 11.

† Annotationes. Acad. Lib. 1. p. 69.

same kind of structure; and he considers the vesicular mole to be the product of these globules or pouches enlarged by diseased action; this opinion is in a certain degree confirmed by the circumstance that the same vesicular bodies resembling hydatids have been found attached to the placenta, or to the membranes, in cases of miscarriage, or even at the full period of utero-gestation, when the fœtus had not been blighted.*

Schleiden and Schwann have by their histological researches on the development of the elementary cells in the vegetable and animal kingdoms, demonstrated the formation of young cells within the parent cell, from a similar cyto-blast; these morbid cysts have in like manner an endogenous development, from the laminated parietes of the parent cyst, the young hydatids bud forth from between its layers, and appear in the cavity of the primary cyst; the same process may continue until we have the original cyst containing many smaller cysts; which increase and multiply, arrive at maturity,

* Storia del parto vesicolare. A.D. 1710.

and are finally ruptured and expelled by the forcible contraction of the excited uterus.

Dr. Hodgkin's valuable contribution to the pathology of cystic formations has thrown much light on the subject; and we gather from his investigations, as well as from the researches of cotemporaneous histologists that cysts are either simple (unicancellated) or compound (multicancellated.)

The compound cysts are divided into two classes, the classification depending solely upon the seats of development of the secondary cysts.

1.—Cysts containing secondary cysts in their parietes, and again the secondary cysts in the same manner including tertiary cysts within their parietes.

The filial cysts project more on the outer than the inner surface of the parent cysts, and often appear to arise from a separation or breach of continuity in the wall of the parent cyst.

2.—Cysts enclosing secondary cysts which arise from the internal surface of the primary cysts, and grow into their cavities.

They are generally pedunculated, and then appear pyriform, or wedge shaped; sometimes they are sessile upon a broad base.

The secondary cysts are generated in the internal layer of the primary cysts.

The development of cystic growths is as follows : from the inner surface of the parent and filial cysts ramify cauliflower excrescences, which terminate in branchlets mostly bulb shaped at their extremities ; these are found to contain incipient cysts.

The excrescence arises through the development of areolar tissue, out of a transparent nucleated blastema.

These minute cysts are replete with granulated nuclei, and elementary granules.

To recapitulate—the history of the development of the cyst may be summed up thus briefly : by spontaneous germination the elementary granule passes by intussusception into the more developed nucleus, and the nucleus in like manner grows up into the still more highly developed cyst ; finally, the primary cyst, by endogenous production, generates secondary and tertiary cysts.

Uterine vesicular hydatids may be divided into

- 1.—*The solitary or simple cyst* containing the embryo or fœtus, more or less transformed or obliterated.

2.—*The clustered or compound cysts* with a solid central part or axis, as the basis of their attachment.

The solitary cyst is more frequently complicated with utero-gestation, or with a fleshy mole, than the clustered cysts.

The transformation and obliteration of the ovum is the result of the pressure of the morbid growths; which excites inflammatory action, and terminates in successive deposits of coagulable lymph; these may undergo some organization, and eventually degenerate into an amorphous and homogeneous mass.

Nutrition is conveyed by the uterine vessels to the hydatids through the investing membrane, which is connected with the inner surface of the uterus by the unchanged portion of the ovum or placenta. When the expulsion of these growths supervenes, the denuded uterine surface on examination presents, in a modified

In the thesis of Gregorini, published in 1795, we find this classification:—

A.—Hydatides uteri a conceptu.

1. Hydatides uteri gravidi cum foetu.

2. Hydatides fecundinae sine foetu, falsa graviditas.

3. Hydatides fecundinae post partum naturalem relictae.

B.—Hydatides sterilium.

degree, a similar appearance to the lining membrane of the uterus subsequent to delivery ; but they rarely can occasion the placental mark of four or five inches in diameter, or such ampliation of the uterine vessels as we observe after parturition.

SEMEIOLOGY.

SYMPTOMATOLOGY.—In the consideration of the symptoms of the growth and presence of hydatid cysts in the uterus, it will be desirable to make a concise statement of the general rules which should guide the practitioner in the investigation of uterine diseases. Dr. Simpson has made some apposite remarks on this important subject ; he mentions that our attention should be particularly directed to the derangement in the functions and vital conditions of the uterus, the dynamic symptoms in the pelvic organs, the sympathetic pains in different and distant parts of the body, the derangement of functions in distant organs, and lastly the general constitutional derangement, such as cachectic and anæmic conditions. As a corollary to this exposition, the diagnosis will be materially fa-

cilitated by adopting the subjoined formula : —

- 1.—The external or abdominal examination of the patient by sight, touch, auscultation and percussion.
- 2.—The tactile examination of the uterus, ovaries, &c., by the vagina and rectum ; the combination of the external and internal modes is a most important aid in diagnosis.
- 3.—The use of the speculum.
- 4.—The use of the uterine sound.
- 5.—The use of sponge tents, so that after dilatation the finger may be introduced into the '*cervix*' or cavity of the uterus (recommended by Chambon, A.D. 1799).
- 6.—The microscopic and chemical examination of the vaginal and uterine discharges.
- 7.—The employment of the exploring needle in cases of fluid collections ; in order to ascertain the contents of such collections.
- 8.—The adoption of anæsthetic agents to relax the abdominal parietes, and enable us to practice the different modes of examination in cases of excessive or neuralgic tenderness.

The dynamic symptoms of uterine disease

are as follows: frequent micturition, dysuria, retention or incontinence of urine, pains about the bladder or rectum, in the groins, along the crest of the ilium, and along the course of the sciatic and crural nerves; intermittent pains in the lower part of the abdomen, constipation and difficult or painful defœcation.

The symptoms which present themselves on the growth of uterine hydatids are for the most part obscure, and the diagnosis is frequently difficult; this arises from similar abnormal phenomena, holding a prominent place among the organic sympathies excited by a gravid uterus.

It appears expedient for practical purposes to notice in the *first place, that common variety of the malady distinguished by an almost total absence of physical suffering*, the symptoms simulating those of pregnancy; and *secondly, that more exceptional form of the disease accompanied by grave and serious complications*; which is peculiarly the subject of investigation in this treatise.

The morbid inchoation of hydatidic formations may be deemed suppression of the menses, with more or less derangement of the general health;

there is an irritable state of the nervous system, and consentaneously the functions of the chylipoietic viscera are appreciably disordered.

The abdomen enlarges from the growth of an uterine tumour, the increase in size is generally rapid during the first three months, and then becomes stationary.

Not only is the abdominal tumour disproportionately large when compared to that of the earlier months of utero-gestation, so as not to correspond with the supposed period; but the enlargement takes place more quickly than is observed in pregnancy. On manipulation the swelling is found to be inelastic, soft and doughy; and on placing the hand on the abdomen no fœtal movements can be distinguished: there is also a want of symmetry or equality in the shape of the enlargement, and a flatness of the umbilical region, and occasionally the abdomen is tympanitic.

Should an ovum be complicated with the cysts, the mammæ amplify, and their areolæ darken: sometimes a milky or serous fluid is excreted; when however the ovum loses its vitality, the breasts assume a flat and flaccid appearance, and no longer participate in the morbid action.

“ Les mamelles, moins gonflées, contiennent au lieu de lait, de la serosité.”*

Milk is probably only secreted when the hydatids are complicated with an ovum.

We may oftentimes observe in this vesicular disease an unusual degree of chilliness, pain in the back and loins, bearing down sensations, with copious leucorrhœa, thirst, flatulency, with acid eructations, emaciation, debility and a feeling of general uneasiness. In consequence of the sympathy which exists between the stomach and uterus, nausea and vomiting frequently occur. Cases are recorded in which salivation has been observed consequent on the development of uterine hydatids.†

By tactile examination we ascertain that the *cervix uteri* is diminished in length, is much broader and is softer on pressure, and that the fundus is enlarged: these changes are more or less modified according to the quantity of the hydatids enclosed; the greater the accumulation, the more shortened will the *cervix*

* Malad. d. Femmes. p. 204. Nauche.

† When hydatid irritation affects the salivary glands there is no sponginess or soreness of the gums, and the peculiar factor of mercurial ptyalism is absent.

become; and should there be a large amount of these formations, and the period has nearly arrived for their expulsion, a soft mass may sometimes be detected within the *patulous os uteri*.

When the increase in volume of the hydatidic cysts will not admit of the retention of the enlarged uterus in the pelvis, the viscus will then rise into the cavity of the abdomen, and on examination a circumscribed mobile tumour may be detected.

As the cysts increase in size and number, the mechanical compression gives rise to many serious complications; among the most important of these, may be enumerated, *a painful sense of distension of the womb, constipation of the bowels, incontinence and retention of urine, anasarca and œdema, cramps and irregular neuralgic pains*; lastly, to these may be added, the neuroses of sensibility and motility, *anæsthesia, eclampsia, and reflex spinal paralysis*.

We must not however limit the morbid effects of hydatidic growths solely to dynamic action, or mechanical causes.

During the retention of the hydatidic growths in the cavity of the uterus, the parietes of the

organ (more particularly at the period of the expulsion of the cysts,) must bear some analogy to the state of puerperal hypertrophy.

In the early stage the '*os uteri*,' is perfectly closed, but at a more advanced period it becomes in some cases dilated.

The absence of fluid in the uterus, or of a solid body floating in a fluid, may be ascertained when the patient is subjected to the operation of the '*toucher*'; in uterine hydatids fluctuation is not appreciable.

The principal indications of this pathological condition of the uterus, (besides those already enumerated,) are *metrorrhagia*, and a morbid discharge of an albuminous or gelatinous fluid, or of a gelatinous adipose substance; the latter may be considered a characteristic sign, an evidence of the mature development of the cysts, and pathognomonic of the last stage of these anomalous growths; such a discharge must be regarded conservative in its operation, and curative in its result.

We now pass on to that form of the disease which is accompanied by grave and serious complications, and shall take the more important symptoms *seriatim*.

VOMITING is occasionally a most distressing symptom of hydatid formations in the uterus. I have observed it differ in degree and duration from that which arises during utero-gestation; in the latter nausea and vomiting are termed the morning sickness, the gastric irritability being prone to occur early in the day, and after the third or fourth month it generally ceases to occasion any discomfort; when uterine hydatids are present, and much morbid sympathy exists between the stomach and uterus, there is rarely any marked diurnal interval or remission; the nausea harassing the patient frequently in the evening as well as in the morning; moreover it remains persistent for many months, and sometimes does not cease until the uterus is relieved of its morbid contents. The distressing vomiting which is observed in some cases may arise from greater irritability of the sympathetic nerve, coincident with a more liberal supply of nervous filaments to the uterus.

HYSTERIA may be occasioned by the growth and presence of hydatids *in utero*: the cerebro-spinal nerves become the seat of increased reflex excitability, tonic and clonic spasms affecting

the voluntary muscles of the upper and lower extremities, together with those of the abdominal, thoracic, and dorsal regions are established, with hyperæsthesia of the surface of the body.

In the paroxysms I have remarked the symptoms assume an antagonistic phase to those of hysteria, a transition to the epileptic condition, viz. anæsthesia with complete unconsciousness: the serial genesis of these morbid phenomena, and their interaction upon each other produces much complexity; for hysteria is of all other diseases to which the human body is prone the most varied in its aspect, from its tendency to assume a proteiform characterism, and to ally itself to diseases of a dissimilar nature; thus, their reciprocal action becomes a source of perplexity, and renders the diagnosis oftentimes difficult.

The hysterical excitement brought on by the development of uterine hydatids is not always commensurate with their increase and bulk, it may be of a very aggravated form at the onset of their growth, when their presence cannot be ascertained by manipulation, and before their volume is likely to affect by mechanical com-

pression the organic functions, such phenomena may be explained by a reflex influence upon the cerebro-spinal axis.

METRRORRHAGIA.—Uterine hæmorrhago, is a frequent concomitant of hydatid formations, it may arise either from sanguineous exudation, a result of congestion of the uterine vessels, or from their rupture in consequence of detachment of the cysts; the loss of blood is rarely excessive at one time, but frequently recurs at intervals, as one or more of the cysts are separated and expelled; thus hæmorrhage may become severe, and the danger imminent from the protracted drain on the vascular system, and the sanguineous discharge eventually terminate in collapse, the precursor of speedy dissolution.

I have observed an instance of this nature, in which an inordinate uterine hæmorrhagy from hydatid disease, had not only occasioned the usual severe symptoms of an exsanguinated state of the blood vessels, but was attended by loss of vision for many months; this was a rare complication and resulted from tenuity of the blood, as well as from a deficient supply of the vivifying fluid to the cerebral vessels.

The lethargy which is sometimes present may be attributed to the same pathological condition. Dr. Watson (in his lectures on the Practice of Physic, vol. ii. p. 581), states, "That the pale and watery condition to which the blood is at last reduced in Albuminuria may have something to do with the stupor and coma, that similar symptoms are apt to ensue, in conjunction with a similar defect of hematosin. It would seem that under such circumstances the functions of the brain are exercised irregularly, languidly, and at length not at all, in consequence of the failing supply of its appropriate stimulus through the arteries."

(Very recently in a fatal case of hæmaturia similar cerebral symptoms presented themselves to my notice, which appeared to arise from a want of vital plasticity of the blood; and phenomena of the same nature may also depend on an enfeebled '*vis a tergo*,' the heart's action is inadequate to propel the blood freely through the vessels of the brain, congestion takes place in the veins and sinuses, and probably fibrinous concretions may eventually form, and present a permanent obstruction to the flow of blood; this encephalic congestion may terminate in anæmic

coma and death.) To return from this parenthetical digression.

In the early stage of the development of these cysts, uterine hæmorrhage is rare, should it however supervene on the accidental separation of the growths, a portion of them still remaining attached, the loss of blood may with little difficulty be arrested, for the nascent hydatids are as yet small and immature.

It may be advanced, as a rule, that severe uterine hæmorrhage of a dangerous nature rarely occurs before the '*os*' and '*cervix uteri*' are sufficiently dilatable to admit of the careful introduction of the hand for the purpose of removing the cysts.

In the last stage of their growth, the uterine surface covered by the cysts or the peduncle, has much increased in extent and the vessels nourishing them are not only multiplied, but proportionately augmented in caliber, the risk of severe bleeding is therefore greater than in the early period of their formation. When compared to the necroscopic placental mark, that of hydatid detachment is generally small and insignificant, nor is there the preternatural enlargement of the uterine vessels as seen after delivery.

When the cysts have arrived at maturity the '*os uteri*' is more or less patulous and dilatable, and we have a ready mode of affording relief, oftentimes the contractile power of the uterus only requires a slight stimulus to produce expulsive pains.

It must be observed that sanguineous uterine discharge does not always predicate the presence of hydatids '*in utero*,' it may arise from cacoplastic deposit and adventitious formations, such as fibrous tumour, cauliflower excrescence, and likewise during the period of uterogestation from partial detachment of the placenta, or in consequence of its development near the '*os uteri*.'

Sanguineous discharge from the uterus may also arise from congestion of the vessels, depending on primary obstruction in the large venous branches. This appeared to be the cause of uterine hæmorrhage in the case of a lady of the advanced age of seventy-five, after suffering severe lumbar pain, she was alarmed at the appearance of hæmorrhage from the uterus which persisted for three days, and then entirely ceased. She informed me that from the age of the usual period of the cessation of

the menses, she had never observed uterine discharge, or suffered from any affection of the uterus.

Sir C. M. Clarke in his work on 'Diseases of Females,' part ii. p. 116, remarks, that "the hæmorrhage is more frightful than that which follows the removal of the placenta from an uncontracted uterus, and the reason is obvious, —the placenta covered only a limited space of the internal surface of the uterus, whereas the hydatids spring from every portion of the cavity."

This writer is here describing a very severe form of the affection; generally the placental mark is more considerable than that of the hydatic peduncle, rarely do the cysts spring from every portion of the cavity, and when severe *protracted* hæmorrhage supervenes, it probably arises in some cases as much from the hydræmic and dyscrasial condition of the blood, as from the extent of uterine hydatic detachment. When the structure of the uterus becomes involved in cystic degeneration, the hæmorrhage is severe and uncontrollable, and the individual soon perishes.

Uterine hæmorrhage consequent on the

formation and growth of hydatids, may arise from separate, but generally from concurrent causes; when it is the result of rupture of the vessels during the separation of the cysts from their uterine attachment, it constitutes true hæmorrhagic exudate; and in exhausting hæmorrhage the effusion is promoted by defribrination, and diminished blood globules; but sometimes there is sanguineous discharge without any laceration of the vessels; and here it may be remarked as worthy of observation, that the transudation either of plasma or blood globules through the parietes of the capillaries, however relaxed, has not yet been demonstrated; we must therefore attribute the appearance of the colored discharge to the exudation of red serum; the blood pigment having been transferred from the blood corpuscles owing to various changes of admixture, the result of a dyscrasial condition of the circulating fluid.

The presence of hydatids in the uterus may also give rise to passive hypercæmia, and excessive repletion of the vessels where there is laxity, and diminished resistance of the surrounding textures, may determine their laceration.

Percy établit encore un double signe de cette maladie, le premier est une hémorrhagie légère tantôt sanguine, tantôt sereuse : le second, se tire de l'état particulier du col de l'utérus, lequel demeure quelque temps ouvert, et ne change ni de forme ni de position.*

The *os uteri* is not always patulous, nor does the sanguineo-serous discharge always indicate the presence of hydatids in the uterus; Percy attached too much importance to these characteristics of the disease.

The discharges of the serous and sanguineous fluid are rarely synchronous, more frequently some alternation in the sequence may be observed.

The irregularity and suddenness of the appearance and cessation of the discharge occasioned by the rupture of one or more hydatidic cysts, will assist us materially in our diagnosis; and there will be no possibility of our confounding the same with the persistent colourless secretion of cauliflower excrescence.

The Lochial discharge is observed to follow the final and complete extrusion of the hydatidic mass.

* Nauche Malad. d, Femmes. p. 191,

The following case presents a recital of facts not frequently met with in practice, and may serve to illustrate the severe form of this vesicular disease under somewhat varied phases.

Mrs. F—— aged thirty-six, of sanguineous temperament and somewhat inclined to obesity, has been married eighteen years; during which period she became the mother of nine children, and had six miscarriages. She was generally subject to an abundant loss at the time of menstruation, and occasionally during uterogestation, induced sometimes by fright. Her mother and sister have been afflicted in the same manner, but in a milder form. Subsequently to the birth of the fifth child, severe uterine hæmorrhage for the first time supervened after delivery, and continued for many weeks. In every succeeding accouchement the same untoward loss of blood occurred, becoming more and more profuse and protracted, but generally abating about the fourth month after her confinement.

February 11th, 1847.—She was safely delivered of her ninth child, uterine hæmorrhage came on shortly afterwards, and continued in

a greater or less degree with little intermission to the following March.

The sanguineous discharge became so considerable as to produce rapid and extreme prostration, and her condition was oftentimes truly alarming; vision had become much impaired, and she was not unfrequently deprived entirely of sight. A very dark circle appeared around the eyes, not unlike ecchymosis produced by a blow. The anæmic state of the sanguiferous system will account for this abnormal appearance, hæmorrhagic exudate; the eyes no longer received a due supply of healthy blood, and the retinae ceased to perform their functions.

May 10th.—She has remained in the same unsatisfactory condition to this date. During the night the hæmorrhage suddenly ceased, and she was seized for the first time during her illness with violent hysteria; severe constitutional excitement continued for a few days until the hæmorrhagic discharge reappeared, when she relapsed into her usual state of exhaustion. The secretion of milk, scanty from the first, has now entirely ceased.

July 30th.—The loss of blood has continued

with slight intermissions, hysteria often agitating the patient when there had been any diminution in the usual amount of hæmorrhage.

November 14th.—Very violent hysteria came on, with screaming and acute darting and bearing-down pains of the womb; accompanied by nausea and vomiting: the stomach now became extremely irritable, and nearly every kind of aliment was instantly rejected. She lived for one week on small quantities of candied sugar and milk, which she preferred to every other kind of nourishment. The tongue remained clean and moist; the excretion of bile was plentiful and healthy, and there was no evidence of either renal or hepatic disease; and the countenance was free from any expression, that would create a suspicion of the existence of malignant affection of the uterus. The patient was now in a truly deplorable state; the protracted and excessive hæmorrhage had induced severe palpitation and pain of the heart, gasping for breath, cerebral excitement, with the usual concomitants of severe hæmorrhagic discharge. With the aid of the speculum, the os uteri was found to be unduly patulous, and the anterior labium somewhat engorged; there was how-

ever no ulceration or induration, nor indication of cancerous disease; but the parietes of the womb were in a flaccid condition. [On external examination its volume was ascertained to be increased, more especially on the left side, but the position of the organ was perfectly natural.

The pulse throughout her illness, averaged from 100 to 120, generally small and irritable; the emaciation was not so great as might have been expected under the circumstances, and her disposition was cheerful.

December 7th.—The hæmorrhage ceased for ten days, and then returned very slightly; during the cessation of the discharge, the hysteria became, as usual, severe, and the uterine pain more aggravated; the same train of symptoms invariably ensued on several occasions; and I could not help arriving at the conclusion, that the system had become so habituated to the continued loss, that whenever any intermission took place, congestion of the womb, attended with hysterical excitement immediately supervened. During these intermissions, which the patient much dreaded, local depletion and blistering were adopted with the most beneficial results; but nothing tended to abate the

suffering, and tranquillize the system more than the return of the hæmorrhage.

January, 1848.—For the last few weeks, the hysteria has been less severe, but the uterine pain continues; the patient now complains of losses of a peculiar nature, and describes them as passing away in gushes: the fluid discharged is of a dirty white colour, and somewhat offensive; probably occasioned by its retention in the cavity of the womb; there is a sensation at times as if something had been ruptured in the inside. The true nature of the case now became manifest; the evident increase on placing the hand over the hypogastric region, with the general symptoms had led me to suppose there must be some abnormal growth in the uterus; there could be no doubt of the formation of hydatids.

March 1st.—The patient continues much in the same state; at times the vomiting is most severe, distressing her for a fortnight with scarcely any intermission.

September 10th.—On external examination, a slight fulness could still be detected over the womb; there has been no hæmorrhage for nearly two months, but frequent discharge of

the fluid contents of the hydatid cysts ; in other respects the severity of the general symptoms has become mitigated. The sickness has abated in violence, the pain is not so severe, the sight has been gradually improving, and the patient can now read large type, and distinguish the colors of the paper on the walls of her bed-room.

September 14th.—For the last fortnight she has endeavoured to raise herself from the pillow by means of a rope suspended from the bedstead. In making an effort yesterday some large cysts must have been ruptured ; she experienced a sensation as if something had broken in the inside, and in a few hours she was seized with severe uterine pain, accompanied by a bearing-down sensation ; this was followed by the expulsion of several portions of lardaceous matter : since this occurred, the hæmorrhage has again returned, the vomiting has been very troublesome, the sight again impaired, and she now complains of strange internal sensations, dissimilar to any she has previously known.

October 12th.—From time to time the womb has been relieving itself of these adventitious

growths; their expulsion has been always preceded by bearing-down pains. About four ounces of this adipose matter have been expelled from the cavity of the uterus since the 14th of September last, to the present date; a period of about four weeks.

January, 1849.—There have been no solid or fluid contents of the hydatids ejected from the womb since the 12th of October; and a gradual and progressive amelioration in the condition of the patient has taken place. The volume of the uterus is reduced to its original size; vision is almost perfectly restored; the vomiting has ceased; and the hysteria now gives but little disquietude; menstruation is re-established without being in excess: the dark appearance round the eyes has disappeared, and there has been considerable increase in strength, although she is yet unable to leave her bed.

March 14th.—Continued improvement; the patient now complains only of debility, but is gaining strength daily, and is enabled to resume her household duties, after being bed-ridden upwards of two years.

Remarks.—In the earlier months of the

disease, before there was any indication of hydatid growths, the flow of blood was controlled by astringents; for this purpose ergota, gallic acid, acetate of lead with acetic acid, alum, catechu, rhatany root, and the muriated tincture of iron, were administered successively for a lengthened period. The gallic acid and ergota were given in large and repeated doses. At the same time other auxiliary remedies were not neglected; injections of cold water, decoction of oak bark with alum, and the tepid and cold hip-bath were employed with advantage. The hæmorrhagy was restrained by this treatment, and the violent hysteria was combated with ammonia and opium. At a later period the system was supported with the carbonate and sulphate of iron, the mineral acid and the di-sulphate of quinine; the hydrocyanic acid with effervescing saline medicine was administered to relieve the vomiting.

On the sudden cessation of the sanguineous discharge leeching and blistering were had recourse to with most decided benefit; alleviating the severe uterine pain, and abating that intense hysterical excitement which always

supervened on the disappearance of the hæmorrhage.

The vascular system had been so exhausted by severe hæmorrhage, that it was with considerable reluctance I adopted this mode of relief; by the abstraction of blood, I feared to promote absorption, and render the circulating fluid still more hydroemic, thereby increasing, instead of diminishing, the chances of continued hæmorrhage. So much benefit, however, attended moderate local depletion, that I did not subsequently hesitate to have recourse to it when the violent attacks ensued; taking care however to relieve the congested uterine vessels, by the aid of vesication, rather than by topical blood-letting.

The patient subsisted for nearly two years on diet consisting of beef-tea, isinglass, soup, fish, and farinaceous food.

The history of this case, from the date of the accouchement of Mrs. F—— to her recovery, extends over a period of two years; and may be divided into the first stage of continued uterine hæmorrhagic effusion of eleven months' duration; and the second, commencing from the time the discharge became intermittent

until the final and complete extrusion of the hydatids from the cavity of the uterus.

The frequent abortions and accouchements may be considered predisposing causes of the hæmorrhophilis; and the hereditary tendency, —other members of her family having been affected in like manner,—must not be overlooked.

With relaxation of the secreting orifices of the uterine capillaries, and of the parenchymatous tissue, there existed much congestive intumescence; and the hydræmic condition of the blood might be said to have passed into dyscrasial anæmia: the colored effusion surrounding the eyes was the result of transudation through the parietes of the vessels, of blood serum; which owing to various changes of admixture had taken up blood pigment from the blood corpuscles, and appeared as ecchymosis.

The hydatids at first extruded contained only fluid; as they increased in size, unctuous, concrete adipose matter appeared; possibly the fluid may have become inspissated by absorption or exudation; or cysts of a later growth, containing the more solid product may have been generated.

The presence of these cystic formations in the uterus occasioned much local pain, most distressing vomiting sometimes continuing for four or five consecutive days, with but slight intermissions; paroxysms of hysteric-eclampsis in its most aggravated form; the patient remaining for hours in a state of unconsciousness, or at times so convulsed as to require coercion to prevent the infliction of injuries on herself and others; and on some occasions the screams were so loud as to alarm the inhabitants of the adjoining houses. The loss of vision was a peculiar complication, and rendered her confinement truly irksome; for the space of nearly two years she had neither the satisfaction of seeing her friends, or any external object.

From an induction of the facts supplied by the rupture of the investing membrane, and consequent expulsion of the hydatids; we have an indisputable and unmistakable illustration of the importance of aiding the recuperative power of nature by inducing expellent uterine action; for soon after the expulsion of the diseased mass, the pain, vomiting and hysteria became less urgent, the morbid phenomena ceased, and the patient had no further relapse.

It has been well said, that "Nature herself frequently suggests the remedy, and that all curative measures are, more or less, imitative of natural processes."

THE DISCHARGE OF A COLOURLESS AND INODOROUS FLUID indicates the rupture of the investing membrane of one or more hydatid cysts, and may be held an important link in the chain of evidence, and corroborative of the nature of the case. It is generally sudden, passes away in gushes, and is attended with slight bearing-down pains; when the period however arrives for the complete expulsion of these morbid growths, there is the usual vaginal secretion, frequently severe pain, and the phenomena which accompany premature or ordinary labour.

Some rare instances of discharges of watery fluid from the vagina during utero-gestation have been recorded, and must be distinguished from the foregoing.

Such discharges arise from a superabundant secretion of the '*liquor amnii*,' or '*liquor chorii*,' commonly designated 'a dribbling of the waters,' or from an inordinate secretion of a thin colourless mucus from the lining membrane of the

vagina. The history of the case, the quantity and character of the flux, its duration, mode of escape, and effect on the uterine enlargement, will aid us in our diagnosis.

The involuntary escape of urine which sometimes occurs in pregnant women is sudden and irregular, but the hydatic fluid being always inodorous (excepting when it has been retained in the uterine cavity,) can readily be distinguished from the renal secretion.

ECLAMPSIA is distinguished from Hysteria by the fits being invariably accompanied by anæsthesia, and complete loss of the perceptive powers, in other words, by a state of unconsciousness; the interval is also marked by psychological depression, obtuseness, and failure of the memory. I have already cited an instance in which uterine hydatids had an etiological influence in producing epilepsy: as the pressure of the gravid uterus is an exciting cause of puerperal convulsions; so may uterine irritation consequent on the presence of such morbid growths, occasion a similar epileptic condition.

REFLEX PARALYSIS, WITH ANÆSTHESIA OF THE SPINAL CORD.—Diminution of motility and of sensibility may either arise from the

direct pressure of a gravid uterus, ovarian tumour, or uterus containing hydatidic cysts upon the nervous plexuses of the pelvis; or by a reflex influence on the spinal cord; in the former instances the effect is partial, in the latter more general, as both sides of the body become implicated in the loss of power.

In the 'Indian Register of Medical Science' for the year 1849, Dr. Davey has given the history of a very remarkable case of uterine hydatids, in which there existed complete paralysis of both the superior and inferior extremities, with very impaired sensation of the thighs and arms, difficult and painful deglutition, and a laborious and oppressed respiration. His patient was a lady about the age of twenty-four years, she had usually enjoyed excellent health, was recently married and pregnant, in consequence of her suffering most severely from continued nausea, vomiting, insomniæ, pain, and debility, (the usual treatment having been unsuccessful, and her condition critical) it was considered expedient to induce premature labour, "this gave immediate and permanent relief, a sudden and alarming expulsion of 'waters,' mixed with

coagula, passed from the uterus, the lochial discharge subsequently diminished, and in due time disappeared, and no indication of the pregnant state remained." Hydatids were probably expelled with the ovum, and the complication may have been the cause of the severe and unusual symptoms which presented themselves.

When, the result of conception, women are prone to suffer from a recurrence of these morbid growths; this appears to have occurred in the instance now recorded, for Dr. Davey thus continues his statement, "On the 18th or 19th day after the escape of the uterine contents, my attention was called to the state of the uterus, which my patient declared had somewhat increased rather than diminished in size within the past few days. I was informed also that the character of the vaginal discharge had much altered, and that it then presented a sanguineous appearance. On my next visit, after three days, I found all the symptoms much aggravated, the size of the uterus had very evidently increased. Mrs. T— complained of a painful sense of distension of the organ, as if it were about to 'burst,' and told me more-

over that she was losing the use of her fingers, the extremities of which had become insensible to feeling. The voice was reduced to a mere whisper, and the act of deglutition was performed with some difficulty.

Feeling assured that all the symptoms were dependent on the abnormal condition of the womb, and the presence within it of some irritating foreign body, the nature of which I could do little more than conjecture, and believing that the persistence of this foreign body, whatever it might be, within the uterus would progressively destroy the various powers of life, and so kill my patient, I gave it as my conviction, that the only course to pursue at all likely to be of any real and permanent benefit, was that one calculated to rid the womb of its contents; in fact, to repeat the operation before resorted to; viz. the dilitation of the '*os uteri*.'

A consultation was held, and my advice was overruled.

A week had hardly elapsed ere the case became so alarming, and all its symptoms so much aggravated, that further delay would have been only criminal. The uterine tumour had risen,

by this time, to the umbilicus, and was exquisitely tender. The extremities, hands and feet, arms and legs, were completely paralyzed; not a single fibre in any one muscle could be called into action—the extensors and flexors of both the thigh and fore arm were almost powerless.

The nerves of sensation although not absolutely paralyzed, were much affected; the extremities felt for the most part, inflated and softened; and now and then pricking pains were experienced in different parts of the limbs.

Both respiration and deglutition were much impaired; in consequence, doubtless, of the abstraction of nervous power from the muscles concerned in these respective acts.

The dilatation of the '*os uteri*' was performed on two different occasions, and then expulsive pains came on; and after continuing very regularly for two or three and twenty hours, terminated in the evacuation of a large quantity of hydatids!

I was now led to hope that the parts affected would in the course of time, re-acquire their normal condition; nor did the progress of the

case, immediately succeeding to the escape of the hydatids, do else than encourage so much ; for thirty hours had scarcely elapsed ere the act of deglutition was unattended with the slightest difficulty or inconvenience.

It is worthy of remark that from the third to about the tenth day, the lacteal secretion was continued.

At the expiration of a week the extensor and flexor muscles of the thigh and arm had regained considerable power ; nor were the flexors and extensors of the fore arm altogether useless ; the digital extremities were capable of being very slightly moved, the lower extremities although improved, did not at this time keep pace with the upper. The nerves of sensation appeared everywhere recovering their natural tone, and the general health was much improved.

In order to facilitate the restoration of the functions of the spinal system, I now employed galvanism ; this treatment was directly followed by extreme restlessness and insomnia—the cerebro-spinal functions became much affected.

The galvanism was now omitted, and mor-

phine prescribed in order to allay the irritation of the brain and spinal cord, this together with iron, quinine, and change of air, strengthened the constitutional powers, so that in a few months after the expulsion of the hydatids, the health was perfectly restored.

Dr. Davey concludes his interesting paper by observing, "that the presence of the hydatidic mass '*in utero*' was the cause of the paralysed condition of the motor and sentient nerves, as well as that of the respiratory nerves, and of those presiding over the motions of the larynx and æsophagus cannot be doubted, seeing that these several abnormal phenomena commenced and kept pace with the uterine enlargement, and were almost directly relieved on the evacuation of the hydatidic mass."

As this was not the hysterical form of paralysis, evanescent or periodical, but persistent in its nature, it would have been injurious to the patient to have stimulated the peripheral nerves by endermic applications, galvanism, vaginal injections, or the internal administration of nux vomica, without having first adopted measures to evacuate the contents of the womb.

The source of these morbid phenomena may

be traced to continued irritation of the incident excitor nerves, from the presence of these morbid growths in the uterus; after their expulsion relief was not immediate; we can understand, by the sequel, how much the nervous power had been exhausted, and that the lapse of a certain period of time was necessary for the perfect restoration of the functions of the sentient portion of the nervous system, as well as for a return of the normal irritability of the excitatory or true spinal system of nerves.

When hydatiferous cysts co-exist with a living ovum, the symptoms of the puerperal state common to the period are observed as usual; but should the ovum perish, the loss of its vitality is soon made manifest by the declension, and sometimes final cessation, of the more important signs of utero-gestation; hence when this affection is found concurrent with pregnancy, the phenomena observed antecedent to the destruction of the ovum are more patent and determinable; but when the ovum ceases to exist, or when the cysts have not been complicated with an ovum, the converse must be held the rule.

The development of the cysts by interfering

with the functions of the ovum, may not only destroy its vitality, but produce abortion.

Hydatids are sometimes interspersed with moles; in the *Edinburgh Monthly Journal of Medical Science*, vol. xiii., p. 24, a case of this nature is recorded: a woman, aged 49, multiparous, had no abdominal distension, or mammary enlargement; most dangerous hæmorrhage, however, supervened after the catamenia had been suppressed for many months, and a mass of hydatids, with moles, was expelled from the uterus.

Foderé states, "that the patient often experiences violent convulsive motions in her abdomen." The medical adviser may be deceived by such information, and may infer that pregnancy exists. Some time since I was engaged by a member of the profession to attend his wife in her confinement; she had borne several children, and was about thirty-five years of age; I ascertained that there had been the usual abdominal increase, irregular suppression of the menses, and enlargement of the mamæ; she supposed herself some months advanced in pregnancy, and assured me that there had been for many months distinct foetal

movements. Time passed on, and the usual period of utero-gestation elapsed. I submitted to the husband the expediency of his making a careful examination of the uterus, and on his next visit to me was informed, that a large cluster of hydatic cysts had been expelled without any unfavorable complication. These movements are probably occasioned by nervous irritation, and uterine contractions; the cysts compressing one another, and changing their relative positions; or they may arise from the peristaltic action of the intestines, distended with gaseous fluids, and unduly excited by the burdened uterus.

Capuron mentions a case of pregnancy shewing the uncertainty of diagnosis. A female, with a very large abdomen, was admitted into one of the hospitals of Paris. She was visited by many distinguished accoucheurs, surgeons, and physicians. Some declared she laboured under ascites; others, that a scirrhus and dropsical ovarium was present. An abdominal pregnancy was also suspected, but no one believed it to be real pregnancy, since no motion of the foetus could be made out by those in attendance on her. The abdomen enlarged,

and after three weeks of examinations and consultations, a strong and healthy child was born.*

“ Mais les praticiennes n'ignorent point que des femmes sont accouchees d'enfans tres vigoureux, sans les avoir sentis remuer pendant tout le temps de la grossesse ; tandis que d'autres, apres avoir pris des mouvements spasmodiques de l'abdomen pour ceux d'un enfant, n'out rendu que des moles.†”

Sydenham, when alluding to the swelling which “ looks like pregnancy” observes, “ This is commonest with widows, and with persons who become advanced in life before they are married ; and such persons, partly on their own judgment, but much more on that of their oracles, the midwives — fancy the motions of a fœtus, sicken like women in the family-way, swell about the nipples, have a show of milk, and on the strength of all this, order baby-linen for the child that is to be, and prepare things for its reception into the world. The abdomen, however, decreases as it increased, and so undeceives them.‡”

* Capuron, *Malad des Femmes*. p. p. 73, 74.

† *Idem*. p. 272.

‡ *Works*. Vol. II. p. 165.

By the foregoing testimony we learn that no confidence can be placed in the statement of the patient; the practitioner must be guided solely by his own judgment, and careful tactile examination.

Physical diagnosis with the aid of dynamic or rational symptoms, based on sound physiological and pathological doctrines, will not fail to remove many of those difficulties which perplex the practitioner in these cases.

Hydatids '*in utero*' frequently simulate utero-gestation; for the purpose of diagnosis the following discrepancies may be enumerated, and by the aid of this formula, the practitioner will not be at a loss to determine the nature of the case.

1.—The absence of the placental murmur or uterine souffle, as well as the pulsation of the foetal heart, may be ascertained by auscultation.

2.—There is no hypogastric percussion ('*ballotement*,') no quickening, nor by tactile examination can foetal movements be detected.

3.—The abdominal swelling is disproportionately large for the supposed period of pregnancy.

4.—The increase is rapid and then ceases, not slowly progressive, as in the pregnant female; and it is sometimes accompanied by severe pain.

5.—By percussion the enlargement is found to be inelastic, soft, and doughy.

6.—Some inequality in the shape of the abdomen may be detected, and the umbilical region is flat.

7.—Irregular and sudden uterine discharges of a limpid fluid.

8.—Occasional uterine hæmorrhage.

9.—By digital examination the os uteri may be found imperfectly closed, and sometimes with a soft mass presenting.

10. There is generally more or less abdominal tenderness on pressure, and the health is rarely satisfactory.

11.—It sometimes happens that the duration of the abdominal enlargement exceeds that allotted to the term of utero-gestation.

In the early period of the growth of hydatids, it is impossible to ascertain their presence in the uterine cavity, or to form a correct diagnosis from utero gestation; at a later period the symptoms (from their peculiarity and seve-

rity,) remove all doubt as to the nature of the case.

The points of distinction between Hydatids ‘*in utero*’, and certain uterine affections, which in their symptomatology bear some affinity, will now be briefly mentioned.

Physometra, or uterine tympanites, is of very rare occurrence, the more important diagnostic signs are greater elasticity of the abdominal tumour, and increased resonance.

Hydrometra, or uterine dropsy, is characterised by more perceptible fluctuation, and the presence of an accumulation of fluid gives rise to symptoms of distension more or less aggravated.

Constatini de Gregorini, A. D., 1795, gives this definition ‘*de Hydrope uteri*’: “Hydrometram, hydropem uteri, vocamus præternaturalem serosam, lymphaticam aut pituitosam in uteri cavitate colluviem.”

“Dans l’hydropisie de matrice, en frappant d’un côté, on sent un petit contre-coup sur la main appliquée contre le côté opposé, on ne sent rien de pareil dans la mole.”*

* Astruc Traite des Malad. des Femmes. p. 488. A. D. 1795.

Hydrometra may be the result of a perverted action of the lining membrané of the uterus, with effusion of fluid, which, in consequence of the closure of the 'os uteri,' occasions distension of the cavity.

Some writers are of opinion, that '*Hydrops uteri*' must be considered one simple hydatidic cyst, distending the cavity of the uterus.

Boivin refers to the diagnosis between the vesicular and fleshy mole :—

“ Ainsi fixées sur la nature de la mole vésiculaire, nous sentirons aisément que ses symptômes, sa durée, sa terminaison doivent peu différer de ce qui appartient à la mole charnue.

Toutefois on peut dire, 1^o Que l'utérus se présente ici, en général moins pesant, moins dur, quoique sans fluctuation plus manifeste :
 2^o Que la durée de cette fausse grossesse est souvent plus longue (de trois à dix mois) :
 3^o Que ces fausses hydatides sont plus fre-

A case of uterine dropsy is mentioned in the 'Phil. Transactions,' Vol. xviii, p. 20. 'There was a determination of fluids to the breasts, and the menses were suppressed, the uterus continued enlarging and the patient finally died. She was supposed, by eminent men, to be pregnant.

quements rendues par lambeaux, et par conséquent, en plusieurs fois."*

By digital examination, hydatids of the uterus can be distinguished from the fungoid excrescences of *carcinoma*: cancerous degeneration at first appears uneven, nodulated, hard and elastic to the touch, and finally as a callous, loose, and spongy ulcer, it generally attacks the inferior segment of the '*cervix*.'

Cauliflower excrescence is a very rare variety of cancer, and projects from the '*cervix*' as lenticular, pale red, transparent, tolerably hard corpuscles, which bleed profusely on being touched. This form of cancer is either epithelial or medullary, probably the former variety.

Fibroid tumours generally arise from the '*fundus*', but when they occur at the orifice, affect the upper segment of the '*cervix*.'

Tubercular deposit arises in the cavity of the uterus, and is never developed in the '*cervix*' or vaginal portion.

* Malad. de Uterus, p. 288.

PROGNOSIS.

PROGNOSIS. In the simple form of this vesicular disease there is comparatively little danger, and the prognosis is favorable; but in the more severe form, a too confident opinion must not be expressed. The result is more to be apprehended when the disease appears at the period of the cessation of menstruation, or between the ages of forty and fifty, and the risk is increased should exhausting hæmorrhage supervene.

Frequent pregnancies or abortions, and prolonged lactation exercise an unfavorable influence, and a long continuation, or a recurrence of the disease, may terminate in a critical manner by cystic degeneration of the uterine walls, or by inducing malignant disease.

Gottwaldius writes, "*Hinc etiam tumores glandularum uteri, scirrhi, atherometa, aliaque glandularum mala cum hydatibus uteri sæpius juncta sunt, cum pressione horum tumorum oriantur dilataciones vasorum.*"

"On pourrait conclure — que la mul-

tiplicité des grossesse prèdispose a la mole vésiculaire.”*

“ Quand leur accroissement a ètè long, elles persistent pendant des annèes entières ; et commee l’observe Avicenne, elles occasionnent la mort des femmes qui les portent. Ce sont surtout celles qui ont contractè une grande adherence avec la matrice ; qui ont une longue durèe.”†

“ Mais surtout il se precautionnera contre l’effusion de sang considerable, sans laquelle ces sortes de corps etrangeres ne tombent guères, et qui causent souvent la mort.”‡

“ Aussi l’hemorrhagie, les douleurs, entretenues par ce travail à résultats incomplets, ont-elles été assex souvent facheuses, et a-t-on vu meme plusieurs fois la mort survenir avant l’expulsion de la mole vésiculaire.”§

Sir E. Home relates a case where the patient after being attacked with flooding and vomiting, and spasm in the abdomen, died : on opening her, the womb was found filled with hydatids, and its mouth a little dilated.

* Boivin and Dugès. *Malad. de Uterus*, p. 294.

† Chambon, *Malad de la Grossesse*. p. 121.

‡ M. Peu, A.D. 1694. p. 561.

§ Boivin and Dugès. *Malad. de Uterus*. p. 288.

Dr. D. Davis has seen several fatal cases, not less than six or seven in twenty years.*

Lossius mentions a widow who for several years had a tumid belly; after death hydatids were found 'in utero.'†

In a large number of cases the general health of the patient and the condition of the uterus, do not appear to be permanently affected by the disease; and the system, after a lapse of time, recovers from the debility arising from loss of blood.

TREATMENT.

TREATMENT.—The nomenclature of uterine diseases used in the works of medical authors of the past century is not remarkable for its simplification, and it is difficult to glean from their writings the opinions they entertained respecting the pathology of cystic growths '*in utero.*'

Of late years the experience gained by clinical observation has diminished the difficulties which beset the inquiry, and which formerly

* Obstetric Medicine. p. 685.

† Obs. Med. Lib. IV. Ob 16.

were sufficiently embarrassing as to render the mode of treatment vague and unsatisfactory : many who have made the subject of uterine hydatids their theme, have drawn their descriptions too exclusively from the milder forms of the disease, and have considered the presence of these adventitious formations more particularly in relation to the risk of hæmorrhage ; but the correlation of morbid phenomena observed in aggravated cases, has been ignored, or passed over in silence.

Sir C. M. Clarke states, " that all attempts to cure the disease artificially, and to arrest its progress otherwise than through the natural efforts of the organ have been of no avail ; as symptoms arise they must be treated accordingly, and the practitioner will best perform his duty by watching over the complaint, and by doing no more than is absolutely required, but when the period arrives at which the uterus is excited by distension to expel its contents, then all his efforts will be called forth to control the hæmorrhage, and sustain the powers of the constitution."

The exigency of the case will no doubt demand a high degree of circumspection, but with all

due submission to this author, I must venture an expression of much dubiety as to the correctness of this dictum in its entirety. In duly considering the remedial measures necessary for the treatment of uterine hydatids, we must, at the onset, determine the expediency of inducing expellent action of the uterus. The following passage is from the work of Lanzweerde: "*Molarum cura potius, manuali peritarum obstetricum, vel chirurgorum operatione aggre-dienda est, quam pharmacis.*" *

The long continued retention of a morbid mass in the uterus has generally a very depressing effect on the vital energies, and the important question arises how far the practitioner is justified in permitting the system to be irritated, and the walls of the uterus contaminated, and possibly irretrievably injured, by the presence of hydatids; for although they are non-malignant growths, yet the uterine structure may become involved in cystic degeneration, and the disease destroy life; a case of this formidable nature is recorded in the 'Lancet' Journal, February 1st, 1840;

* Hist. Nat. mol.uter. p. 153.

hydatids were found imbedded in the structure of the uterus, at the superior and posterior portion of the fundus; and death had ensued from internal hæmorrhage, the result of disintegration of the substance, and rupture of the walls of the uterus; the patient had suffered for some time from repeated hæmorrhage, and much bearing-down pain.

It is further worthy of attention that the caliber of the vessels of the peduncle and cysts progressively increases, and the extent of uterine surface covered by the abnormal formations is also enlarged; it follows, therefore, that the supply of blood flowing through the vessels of the diseased part becomes considerable, and that severe hæmorrhage may constantly supervene; the blood is then rendered more and more hydræmic, and the difficulty of arresting the sanguineous discharge is proportionately increased. This simple statement of facts shows very clearly, it appears to me, the view which ought to be taken in the consideration of this matter; after ascertaining, by patient investigation the nature of the case, and without venturing to inculcate measures of great precaution; the practitioner will do wisely to

relieve the burdened uterus of its morbid contents; for without doubt it is better to anticipate the evil, and at once remove the cause, rather than to remain quiescent until the symptoms are so urgent that not to interfere manually would be to imperil the life of the patient.

Four months' retention of hydatids '*in utero*,' may not be attended with any great risk; but should the uterus by its natural efforts fail to displace the cystic growths at the expiration of a few months, manual interference is admissible; for although the period when the uterus would naturally be excited to expel the hydatids has not arrived, and the contractile power of the organ is feeble and incomplete, and the '*os uteri*' may be found undilatable and rigid; yet these facts should not prove insuperable obstacles to the induction of expellent action of the uterus.

It is true that by thus endeavouring to arrest the progress of the disease, hæmorrhage difficult to control, may be occasioned; but on the other side it may be advanced, that severe and even fatal bleeding may supervene without any such interference, or the case may eventually

terminate in cystic degeneration of the walls of the uterus.

By operative procedure the patient will also escape many months' tedious suffering, and that vital prostration, the result of long retention of the morbid mass.

To remove these abnormal growths, the *dilatation* of the '*os and cervix uteri*' may be induced by the introduction of sponge-tents.

"Ensuite on y introduira des éponges préparées qui l'agandiront d'une manière insensible et qui faciliteront l'introduction des instruments ou de la main."*

Dr. Chailly-Honoré in his work on Midwifery, thus describes the operation, "The patient is placed transversely at the edge of the bed, with her pelvis resting upon a hard pillow, and her limbs supported by assistants. When the bladder and rectum have been emptied, the operator introduces a tubular speculum, in such a way as to get the '*cervix uteri*' in the centre of the hollow of the instrument, he then by means of a plugging forceps insinuates a small cone of prepared sponge into the

* Chambon '*Maladies de la Grossesse.*' p. 127. A.D. 1799.

'*cervix*.' This cone ought to be about one inch and a half in length and two-fifths of an inch at its base ; it ought to be well lubricated, and to have attached to it a thread which can be distinguished (when hanging external to the passage,) from the thread attached to the other sponge. This precaution enables the operator, when he proceeds to remove the sponges, to withdraw first that which has been last introduced. The second sponge ought to be sufficiently large to fill the vagina, and it ought, like the other, to have a thread attached to it by which it can be pulled. The second sponge is introduced above the thread of the first, and is pushed up close to the '*os uteri*,' having first been soaked in tepid water, and then had the water squeezed out of it. The speculum is now gradually withdrawn, care being taken during the withdrawal to keep the sponges '*in situ*,' by pressing upon them with the point of the forceps. The operation having been thus completed, compresses and a T bandage are applied.

The time which elapses between the introduction of the conical sponge, and the commencement of decided dilitation, rarely exceeds

twelve hours, "the prepared sponge swells, in consequence of its imbibing the secretion of the cervix, and the water retained in the second sponge. The expansion of the prepared sponge gradually dilates the '*cervix*,' and by the irritation which it causes, it excites uterine contractions. From the time that the sponge-tent is introduced the practitioner ought not to be beyond call; because hæmorrhage might supervene."

Dr. Simpson recommends "a pyramidal sponge-tent, to be constructed with a perforation at its base, and then fixed upon a curved wire or bougie whilst it is being introduced into the '*cervix*,' and finds that the tent, when made and introduced in the mode already stated, required no vaginal plug, or other means to hold it '*in situ*.'

In the case of hydatidic growths more time is generally required, to complete the process of dilatation than in the induction of premature labour; the prepared sponge should remain in position twelve hours, and be then removed, and another of increased diameter introduced in its place; as some days may elapse before the '*os uteri*' is sufficiently patulous to admit of the

removal of the morbid mass, the introduction of several sponge-tents may be found necessary.

The use of the *uterine cold douche* has been recommended to excite contractions of the uterus, if the stream be propelled with force directly against the 'os', reflex action is caused by the shock, and some mechanical distension of the 'os' and 'cervix' may be induced by the soft water wedge; the process should be continued for about five minutes, and the common elastic bottle syringe or stomach pump may be employed for the purpose: the douche is not so certain in its action as the sponge-tents, and the operation must be attended with much discomfort to the patient, and prove very tedious to the operator.

When the subsequent progress is slow, from '*inertia uteri*', or should much hæmorrhage supervene, *Galvanism* will be found advantageous in producing more complete contraction and expulsion of the cysts. The electro-magnetic apparatus commonly employed for medical purposes may be used; the discs should be applied on either side of the uterus, and the effect obtained by passing the shocks through the uterus, or through the spinal cord and uterus;

the uterine muscular fibre is thus directly stimulated either by a rapid succession of shocks, or the effect may be modified by easy graduation in the power, or by intermissions.

Experiments made on a pregnant animal at University College, by Dr. Mackenzie, fully demonstrate the influence of Galvanism on the gravid uterus ; rather more than half an hour elapsed, after the application of the galvanic wires, before labour pains supervened ; the influence was greater when one pole was applied to the upper part of the spine, and the other to the uterus, rather than when both were applied to the latter organ.

Galvanism acts, therefore more powerfully when applied through the medium of the spinal cord and nerves.

It is a safe and efficient agent, and there is no danger of misapplying it to excite uterine contraction.

Ergota may be administered as an adjuvant in expelling the hydatids ; but it is uncertain and uncontrollable in its action, and ought not to be used rashly ; when depression of the pulse ensues it should no longer be prescribed.

We read in Dewee's Diseases of Females

p. 296, " Dr. Macgill administered Ergota to a patient who had suffered severely from uterine hydatids for three months, and in a few minutes a mass equal to a child's head was expelled."

Dr. Hislop relates the case of a lady aged 48, suffering from uterine hydatids of four months' duration, who having been much shaken in consequence of riding in a carriage, was afterwards seized with severe hæmorrhage; ergot was administered, and the '*os uteri*' became sufficiently dilated to admit the hand, when hydatids were found adhering, by a broad attachment, to the entire anterior and superior surface of the organ; when removed they filled a bowl of considerable size.

From fifteen grains to a scruple of the powder, half a drachm to a drachm of the tincture, and from five to ten grains of the extract may be given every twenty minutes; if the effect be not produced, after giving a drachm, or at the utmost a drachm and a half of the powder (or its equivalent in tincture or extract,) more will be useless, and may be injurious.*"

The complete evacuation of the cysts may be

* Churchill's Midwifery. p. 203.

facilitated and the hæmorrhage controlled, by the application of a bandage round the abdomen.

When much pain or nervous excitement supervenes during the expulsion of the hydatids, it may become necessary to have recourse to *Chloroformisation*, to alleviate suffering; moderate anæsthesia has no influence on the contractions of the uterus; but care must be taken that it does not paralyse the action of the heart, or induce congestion of the vessels of the neck or head.

Should the hæmorrhage prove troublesome, and the 'os uteri' be sufficiently dilated, the peduncle might in some cases be probably detached from its base of connection by manual interference; this procedure, however, will scarcely ever be required, as uterine expulsive efforts, the consequence of dilatation of the 'os,' will sooner or later get rid of the burden.

In displacing hydatid cysts in the last stage of their growth, the same mode of manipulation must be adopted as in the removal of retained placenta from adhesions; after lubricating the hand with oil, it must be very cautiously introduced into the cavity of the uterus, and the cysts and peduncle be gently detached from

the lining membrane of that viscus, care being taken that every portion be removed as far as it is practicable, in order to prevent any recurrence of the affection.

The introduction of the fingers, or part of the hand, can only be effected when the volume of the uterus exceeds that of the womb after the fourth or fifth month of utero-gestation ; the cervix may even then be lacerated, unless great care be taken in the operation.

After the expulsion of the morbid contents, it is desirable that a bandage should be applied to the abdomen, and the horizontal position be maintained for some time.

Milk is sometimes secreted ; and, in such cases, should metrorrhagia prove troublesome, the breasts might be excited by suction, to produce uterine contraction, and to arrest the loss of blood.

As febrile symptoms (accompanied by pain of the uterus) occasionally happen, the patient should, in all cases, be placed under strict regimen, avoid stimulating food or drink, and the usual quiet of the lying-in-room must be enjoined.

With regard to the use of opium during the

period of expellent uterine action, it may be observed that some authorities even at the present day entertain different opinions on the subject ; the following are the most important objections that may be urged against the practice ; its action tends to paralyse the womb, and to arrest uterine contractions, thereby increasing the risks of hæmorrhage ; it serves also to mask the peculiarity and severity of the symptoms, and often produces irritability of the stomach.

In exhausting hæmorrhage, whether arising from the presence of hydatids, or in consequence of *placenta prævia*, complicated with a rigid *os uteri* ; or where the size of the organ will not admit of the careful introduction of the hand ; recourse must be had to stimulants, the circumspect use of ergota, plugging, and in extreme cases the operation of transfusion must be performed, but opium should not be administered as a rule, until after the expulsion of the entire mass of hydatidic cysts, or until the removal of the placenta, and child ; so that in either case complete contraction of the uterus may be insured.

True hæmorrhagic exudate—arising from

the separation of the cysts, or rupture of the vessels, the result of passive hyperæmia, with diminution of the consistency of their parietes, or of the adjoining tissues,—must be controlled by lessening the activity of the circulation, and securing the complete contraction of the uterus, in order that the amount of blood flowing through the viscus may be diminished; this can be effected by the local application of ice in a flannel bag over the womb, and by the internal administration of ergot, or the acetate of lead combined with acetic acid and opium; if these measures are found inadequate, the vagina should be plugged with soft dry tow.

When the red serous exudation becomes a secretion, rather than a sanguineous discharge, the vital plasticity of the blood, and the consistency of the parietes of the capillaries, must be increased, by introducing astringents into the vivifying fluid, and lastly the blood corpuscles can be restored, and more perfect sanguification established, by ferruginous medicines, and generous diet.

Care must be taken that mercurial or alkali medicines are not administered, in order that the fluidity of the blood may not be promoted.

The most useful remedies in arresting this discharge are *Terebinthina*, *Alumen*, *Plumbi acetas*, *Ergota*, *Tinctura Ferri sesquichloridi*, and the *mineral acids*; and to these may be added, although less certain in their action, *Cannabinum*, and *Acidum Gallicum*.

In dispensary, as well as in private practice, I have found *Terebinthina* an invaluable agent in controlling hæmorrhage from the uterus. Passive or chronic menorrhagia, congestive menorrhagia of the more advanced period of life, and profuse menstruation in feeble constitutions, may be treated successfully by this medicine.

The spirit should be given in doses of ten to twenty minims, every four or six hours, and the dose can be diminished on the supervention of nausea or diarrhœa.

In severe cases, however, it is better not to rely on one remedy; the medicines in the subjoined formulæ will be found efficacious:—

℞ Spt. Terebinth. rectific., ʒj
Aluminis, ʒss
Acidi Gallici, ʒss
Tinct. Hyoscyami, ʒij
Spt. Chloroformyl, ʒij

Syrup. Zingiber, ʒj

Misturæ Acaciæ, ʒiij

Aquæ menthæ viridis, ʒiss

Misce, sumantur cochlearia duo magna,
quartâ quâque horâ.

R. Pulveris Ergotæ, gr. v.

Plumbi acetatis gr. ij.

Sacchari gr. x

fiat pulvis, ter in die sumendus.

R. Tincturæ Ergotæ Æthereæ ʒj.

Tincturæ Hyoscyami ʒj

Syrupi Croci ʒj

Aquæ pimentæ ʒivss

Misce; sumantur cochlearia duo magna ter
quotidie.

R. Tincturæ Cannabis Indicæ ʒss ad ʒj

Tincturæ Lupuli ʒiij

Syrupi ʒj

Aquæ menthæ ʒivss

fiat mistura, cujus capiat cochlearia duo magna
ter die.

When the hæmorrhagic discharge is controlled, and the improvement is marked and

progressive; we must have recourse to the muriated tincture of iron, which is very beneficial at this later period, and I believe the most powerful of therapeutic agents in the treatment of hæmorrhage, arising from a generally relaxed and atonic state of the capillaries, with hydroæmic condition of the blood.

Gallic acid has been much lauded by some authors as an astringent, and we might assuredly anticipate benefit from its use when we consider its chemical action on gelatinous tissues, and fresh drawn blood. I am persuaded however, that the experience of any unprejudiced practitioner will lead him to decide, that its virtues have been too highly extolled, and that it has been commended in extravagant terms as a therapeutic agent in the treatment of hæmorrhage. When employed, the system should be completely saturated, by administering from five to ten grains every two or three hours, or even more frequently if necessary, and it may be given in large and repeated doses with perfect safety.

The action of Gallic acid on the animal economy being uncertain, it will be judicious in all

severe cases of hæmorrhage not to depend solely on its efficacy.

When an overdose has been taken it is said to produce a small and wiry pulse, cerebral disturbance with syncope, and to diminish the renal excretion.

In exhausting hæmorrhage, with syncope, besides the remedial measures already recommended, we may with advantage have recourse to the inhalation of the *vapour of turpentine*; for this purpose it can be placed in an open shallow vessel near the patient; turpentine may also be introduced into the system by the *endermic method*; this may be effected by the application of thin flannel to the surface of the abdomen, sprinkled with the spirit.

Great benefit may be derived from enemata of cold water given night and morning, and likewise from cold vaginal injections composed of tannic or gallic acids, logwood, oak bark, or acetate of lead with laudanum; care being taken that the hips are raised by a pillow, in order that the solution may pass to the upper portion of the vagina; it should remain there from ten to fifteen minutes.

Boivin recommends titillation of the 'os'

with the finger, cold stimulant injections into the rectum, with friction on the hypogastrium when the uterus does not contract, or when the hæmorrhage continues notwithstanding its contraction.

When the strength will admit of it, benefit is derived from sponging the loins with cold salt water ; or the local cold salt shower bath can be used over the hypogastric region,—a small garden watering pot will be found useful for this purpose.

The patient must maintain the recumbent position, even in the act of defæcation.

Should the bowels be constipated, small doses of magnesia, scammony, rhubarb or castor oil constitute the safest aperients.

So long as an inordinate discharge continues, the diet should be given cold, and consist of essence of beef, and diluted port wine.

The patient ought to lie on a mattress or sofa, in a well ventilated apartment, covered lightly with clothes ; the feet kept warm with hot bottles or mustard poultices, all mental excitement avoided, and perfect rest enjoined.

With reference to the further treatment, the chief indication is to impart tone and vigour to

the system, so as to enable it to resist any morbid tendency to a reproduction of the cystic growths.

The Prophylaxis may be briefly stated to depend on, a salubrious residence, fresh air, exercise, nourishing food, and ferruginous medicines, of which the iodide of iron is the most valuable.

The functions of the body will, by these means, be sustained in that normal state, which conduces to health.

The eccentric irritation of the excitor spinal nerves, by the presence of hydatigenous cysts in utero, may induce eclampsia and paralysis. On the supervention of such complications, the essential part of the treatment is to empty the uterus of its morbid contents as speedily as possible, for until that is effected, there is no probability of any amelioration in the condition of the patient. To relieve the irritation, opiate enemata may be administered; and when there is much nervous excitement, restlessness and pain, chloroform may be carefully used to tranquillize the system, and to induce sleep; but, in the sthenic form of eclampsia with ple-

thorax, chloroformisation is attended with much risk, and is inadmissible.

Dr. Marshall Hall has remarked, that when the functions of the true cerebral or sensient portion of the nervous system are diminished or abolished, as is the case in Anæsthesia, the irritability of the excito-motary or true spinal system of nerves is increased. In the progress of natural labour it is manifest, that Chloroform does not directly control the functions of the excito-motary system; for the uterus continues to contract, (an excito-motary act,) although sensation is annihilated for a time.

Eclampsia being an affection of the true spinal system of nerves, may thus become more intense in its indications under chloroformisation, for as the functions of the true cerebral system are abolished in Anæsthesia, those of the excito-motary system, in an inverse ratio may be exalted.

These facts militate against the indiscriminate use of Chloroform; when the exciting cause of the attack arises through the medium of the functions of sensation it may act benignly by diminishing the same; but in our endeavour to lessen pain, we must remember that in

creased convulsive movement may be induced ; it should therefore never be given with the view of removing the cause of the convulsion, but merely as a temporary means to alleviate suffering ; and in the event of increased convulsive movement, cerebral or cervical congestion, and the signs of failure of the heart's action, it should be immediately discontinued. Providing there has been no excessive hæmorrhagy, moderate abstraction of blood may be necessary at the onset of the attack ; the state of the circulation, in the intervals of the fits, will best guide the practitioner as to the expediency of blood-letting.

Although irritation of the uterus arising from the presence of hydatids, must be considered the exciting cause of eclampsia, we must direct our attention to the inanition which results from exhausting hæmorrhage, and which possesses an etiological influence on the epileptic condition. The indication for the treatment is to restore the vivifying fluid to its normal condition, by the therapeutic agency of the preparations of iron.

In concluding this treatise may I express a hope that in the preceding pages, the reader

has found practical illustrations of the more important morbid phenomena consequent on the development of uterine hydatid cysts; that the treatment advocated, is based upon rational and scientific principles, and strictly within the domain of experience.

FINIS.

NOTES.

Page 21.—Drs. Ransbottom and Montgomery also believe that a portion of retained placenta may become the nucleus of cystoid degeneration; the morbid growths probably arise in the chorion or maternal portion of the placenta, and subsequently spread to the decidual and uterine structure.

Page 28.—Dr. Simpson, in a case that came under his observation, was of opinion that the hydatigenous ovum, or placenta, might be considered a morbid state of a compound nature. 1. Enlarged villi of the chorion, a kind of malformation. 2. The cells of the villi broken up in the internal tissues, and distended by a fluid, so that disease co-exists with hypertrophied state of these structures.

It would be difficult to decide whether the dropsy stood in relation of cause or effect to the malformation, or whether both were the effects of one common cause.

Page 30.—The mother of Beclard, at the fourth month of her pregnancy, was seized with expulsive uterine pains; which resulted in the extrusion of a quantity of hydatids. She subsequently, at the proper time, gave birth to a child, known in after years as the celebrated anatomist.

Page 33.—Mettenheimer and Boivin describe the hydatid cyst as not arising individually by peduncular attachment to a central stem or axis, as exemplified by the grape-bunch; but as cyst growing out of cyst, without being attached by any peduncle, a central mother cyst being the common bond of union. This mode of growth is described at pages 36 and 37.

Page 35.—Dr. Barnes states that the bud-like processes which are seen with the aid of the microscope to arise from the villi of the chorion, are sometimes of a rounded or ovoid configuration. Not unfrequently they assume either a pyriform, fusiform, filiform, or clavate shape, and are observed to be sessile, or elongated into a peduncle, by which they adhere to the villus. These processes or dilatations are found on the sides and extremities of the ramuscles, or branching pedicles, are vesicular in appearance, and must be considered villi in an early stage of growth, for, by a process of gemmation, they are eventually developed into mature villi. In their transition from the incipient to the

NOTE.

fully-developed form, the clavate, pyriform, or fusiform shape, is gradually obliterated, and they become cylindrical with a nodular or bulbous enlargement at their extremities. During the active period of their growth, in the early months of pregnancy, these filial villi are seen in greater number on the placenta than at the full period of utero gestation.

Desormeaux, Virchow, and Mettenheimer, support Valisnieri in his opinion that these buds, by a perverted developmental force, dilate into vesicular hydatids, by reason of abnormal excess of cystic development. On this assumption we must either ignore the fact of the presence of these growths in a nulliparous or virgin uterus, and consider conception a *conditio sine quâ non*; or else, admitting that they have been found in the virgin, or nulliparous uterus, we must believe that they originate either by enlargement of primitive or compound cells, or are developed spontaneously by some alteration in the vital properties of the molecules of the part; so that, instead of being assimilated to the textures and conforming to the ordinary laws of their growth, these molecules, being unduly excited by an exalted morbid agency, spring into existence, cohere together as cysts, and having thus assumed an abnormal type, become independent of the influences of the adjoining living parts, and finally have the power, by gemmation, of producing a multitude of filial cysts.

Page 43.—Dr. Montgomery asserts that the cervix becomes at an earlier stage shortened, and sooner patulous, than in pregnancy, and that obscure fluctuation may sometimes be felt, as if the tumour contained jelly. He also mentions a case where the uterine tumour had a hard and knotty feel, from the presence of hydatids.

Page 66.—A watery discharge may also arise as a secretion from spongy growths, or from hypertrophied muciparous glands, situated within the os, or cervix uteri.

Page 78.—A sound simulating that of the placental murmur may sometimes be heard; this probably arises from the circulation of the blood through the vessels of the hydatid peduncle and mass.

Page 101.—The infusion, or tincture of matico, may also be used, and is one of the most useful of hæmostatic agents.

NOTE.—The pathological views of Valisnieri and Albinus relative to the epigenesis of hydatid cysts, as quoted at page 34, are supported by Dr. Wedl; he states, that the connective tissue cells pass through manifold transitional forms, and appear on the walls of the uterus as flocculi; but are more frequently observed on the placenta in the form of minute nodules: and he considers the essential character of hydatid growths to consist in an embryonic new formation of connective tissue, combined with serous, or adipose degeneration of the villi of the placenta or chorion.

Notwithstanding this observation of Dr. Wedl, I should be inclined to consider the attached uterine cysts as new formations arising out of connective tissue elements, and that the degeneration of the villi must be deemed a complication, rather than a process essentially necessary to the development of the cysts. The question arises, whether the villi can by morphological transition pass into cysts: further observations are required to elucidate this point.

Any partial obliteration of the vessels in the villi of the placenta from fatty degeneration or atrophy, consequent upon impaired vitality, or death of the fœtus, appears to promote the genesis of attached cysts; and the atrophied morphological formations of the placenta, then become peculiarly the seats of cystic development.

Upon reviewing all that has been said in reference to the pathologico-histological characters of these cysts; (and these remarks must be considered suggestive rather than dogmatical,) it appears to me that their development in the uterus of the married female and virgin is genetically the same: that they are however conjoined with divers transformations, from which they are, *ab origine*, essentially independent, and that the involution of the villi of the placenta and chorion into attached cysts, must be considered in the light of mere hypothesis.

